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Campus Goes Green

The University of Texas Medical Branch at Galveston has covered all the bases on conservation. Comprehensive programs blend recycling, energy savings, and public transportation into daily life. This community-wide model is committed to maintaining a clean environment

UTMB strives to become a model of sustainability

In this story:

Recycle it, swap it, or reprocess it—that's the mindset at the University of Texas Medical Branch (UTMB) at Galveston. Rather than see an item discarded, someone on campus probably will have an idea for using it again.

Bright blue recycling bags are a fixture on the UTMB campus, because they hold all the discarded paper waiting to be recycled. Due to confidentiality requirements, the bags are double-zipped and locked until the contents can be shredded./*Photo by John Glowczwski/ UTMB Galveston*

This leave-no-trash-behind attitude is a result of a dedicated effort to extend environmental stewardship to every aspect of university operations. Not only recycling, but pollution prevention and energy conservation are important aspects of campus life.

Each year, the university recycles more than 800 tons of paper and cardboard, along with hundreds of tons of metals, chemical solvents, printer cartridges, kitchen grease, X-ray film, motor oil, tires, and paint. Also computers, cell phones, fax machines, and other electronic devices containing heavy metals are collected for proper disposal.

Some items never leave campus but land in other offices or departments where they can be put to productive use. An online "swap shop" advertises the availability of surplus equipment and office supplies, and the "chem swap" site finds destinations for leftover chemicals sitting in medical laboratories.

Energy conservation is emphasized, too. The 90 university buildings have cut utility use an overall 15 percent since 1999.

This comprehensive approach to sustainability has saved the medical complex hundreds of thousands of dollars and earned numerous honors. This year, the TCEQ named UTMB an environmental excellence award winner in recognition of the campus resource conservation and recycling programs.

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Island Domain

With more than 13,000 employees and 2,500 students, UTMB is a bustling place day and night. The sprawling campus includes six hospitals, a Level 1 trauma center, four schools, research laboratories, a top-security biodefense research center, and a marine biomedical institute.

How are busy health professionals, research scientists, and students persuaded to participate in conservation measures?

"I guess you could say we have a passion for doing the right thing," says Ken Steblein, the university's landscape and recycling operations specialist. "Our program started out small and grew from there. It was a cultural change, for sure. But you just make people aware of what the needs are and the things they can do to help."

The teaching institution, which opened in 1891 as the first medical school in Texas, graduates more than 500 students a year in the health science professions.

Landscaper Philip Fox applies homemade mulch to the UTMB rose garden. Besides landscape debris, the campus recycles broken pallets and Christmas trees. The raw materials are converted into compost and mulch. UTMB has not purchased mulch in 10 years and even gives the surplus to employees./*Photo by John Glowczwski/UTMB Galveston*

As Galveston County's largest employer, UTMB has a major economic impact on the area. It also is the largest generator of waste. Campus operations generate not only solid waste but a substantial amount of hazardous waste due to the nature of the activities, such as medical instruction, hospital treatments, and research.

Therefore, maximizing recycling and minimizing garbage is important, says Steblein.

He recalls that conservation initiatives began in the early 1990s after TCEQ technical advisers suggested ways of reducing waste and creating a pollution prevention plan. A handful of employees formed a task force and volunteered to recycle paper and cardboard.

That program continued for a decade, including some years when recycling generated no money to offset operating costs. Then the task force formed a partnership with Browning-Ferris Industries (BFI) to take over all of the paper and cardboard recycling, and annual volumes grew. Meanwhile, employees were educated on the importance of recycling office supplies, not throwing them away.

Soon, the administration added other components to the recycling program, such as converting landscape debris into compost. A compost project initiated with a TCEQ grant now includes the city of Galveston and Moody Gardens recreation and educational center.

Paper recycling ran into an obstacle, however, when Congress passed the first federal privacy standard to protect patients' medical records and other health information. The 2002 law, which applies to doctors, nurses, and other health care providers, created a roadblock to the routine collection of office paper.

Many UTMB offices process paperwork every day containing Social Security numbers, medical diagnoses, and financial information.

"Finally, we found a solution for protecting confidential information and continuing to recycle," explains Steblein. "The remedy was to redesign the campus recycling receptacles in a way that the contents would remain secure."

The administration instructed that all discarded documents be treated as having potentially confidential information. That meant recycling containers would no longer be stationed in halls, stairs, or other unsecured areas.

Now 15,000 blue bags made of recycled plastic are located throughout the campus. The bags, which hold up to 40 pounds of paper, are double-zipped and secured with a plastic padlock. When the bags are full, they are stored under lock and key.

UTMB has contracted with BFI to install a commercial-grade shredder so that all paper can be processed on-site before it goes to the compactor.

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Laboratory Concerns

Pollution prevention is important to an institution that deals heavily in chemicals and other hazardous materials.

UTMB started a solvent-distillation program in the 1990s. With an exemption from the TCEQ, the laboratories collect used xylene, alcohol, and acetonitrile for distillation. Returning the distilled solvents to laboratories for reuse allows the university to avoid new purchases and to reduce disposal costs.

The university also has determined that unused chemicals need not sit on the shelf or be tossed out. Research laboratories participate in a redistribution program designed for unopened, in-date chemical inventories. Instead of being disposed of as hazardous waste, unused chemicals can be held for recycling up to one year. An internal Web page provides updates on the chemicals available.

"It saves us money not having to purchase new chemicals or dispose of them as hazardous waste," explains Safety Consultant DeAnne Meeh. "About a ton of these chemicals each year gets swapped this way."

Traditional blood-pressure monitors containing mercury are being replaced at UTMB with mercury-free monitors. The phaseout reflects a growing movement in the health care industry to reduce the amount of mercury used in hospitals and clinics./*Photo by John Glowczwski/UTMB Galveston*

UTMB also has been active in phasing out devices using mercury, a toxic substance. Joining other components in the University of Texas System, the Galveston campus has purchased mercury-free thermometers and blood-pressure machines for staff to try. As researchers find the new devices to their liking, they turn in the old mercury-bearing

equipment, which allows UTMB to properly dispose of the mercury. So far, 900 thermometers and 75 blood-pressure machines have been replaced with mercury-free alternatives.

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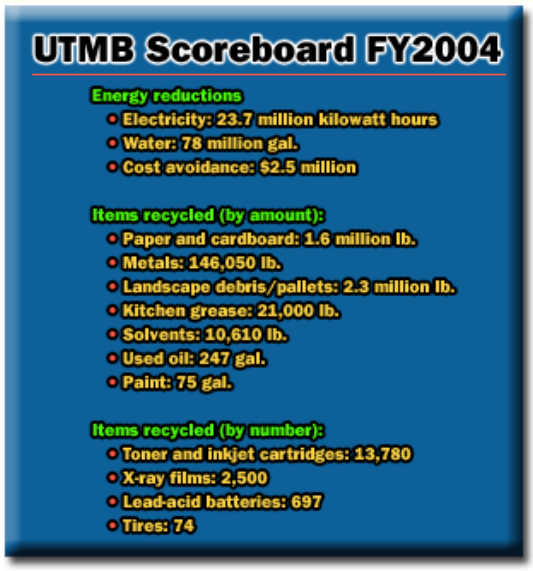
Lights Out

UTMB kicked off its energy conservation program in 1999 with a $4 million investment in new equipment and a campaign aimed at getting employees to turn off computers and dress comfortably for the work environment, rather than adjusting the thermostat.



A "green team" of volunteers was formed in each major building to propose and promote ways to cut energy use. Lighting retrofits, for example, produced major cost savings.

Savings accrued from the new efficiencies funded expansions in the conservation program. By 2004, the campus had spent a total of $12 million on energy upgrades that included power-factor corrections, water conservation equipment, boiler economizers, low-NOX burners, new chillers, and remodeled cooling towers. Energy-control systems were upgraded in most buildings.

Engineering Specialist Gene Curry said solar power also was added to the mix with the installation of 240 80-watt solar panels that light the parking garage during the day. Two fuel cells generating a total of 400 kilowatts are due to be installed soon to further reduce reliance on electricity.

A program to recover chemical solvents relies on a process of recycling and purifying the substances. The distillation-and-reuse practice saves purchasing dollars and reduces the amount of hazardous waste that must be disposed of./*Photo by John Glowczwski/UTMB Galveston*

UTMB's energy needs are anything but simple, says Curry, because research laboratories are big energy users. "With research work, you need 100 percent fresh air all the time," he explains. "That way, you're not circulating things that might be harmful—it goes out through filters."

Curry predicted UTMB's energy needs will get more complex in 2010 with completion of a new biocontainment laboratory, one of two in the country. Researchers in this highly secure facility will work with potentially lethal viruses such as Ebola and West Nile disease.

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Setting an Example

UTMB officials like to say that every employee, student, patient, or visitor has the opportunity to participate in some aspect of conservation. That might be as simple as choosing how to get to the medical complex.

Employees, students, and patients can ride the trolley for free between UTMB and downtown. The agreement arose from a partnership formed by the university and the city of Galveston to encourage motorists to leave their cars behind./*Photo by John Glowczwski/UTMB Galveston*

In a nod to air quality, UTMB has paired up with the city of Galveston to encourage visitors and workers to leave their vehicles at home. An agreement with Galveston Metro allows UTMB employees, students, and retirees to ride city buses and the trolley for free when they show a university identification card. Patients and their travel companions also get free rides with proof of an appointment or a pharmacy visit.

UTMB sponsors 15 vanpools for 250 employees who commute from as far away as Brazoria County.

As for Steblein, he is always looking for something new to recycle or reprocess. Over the last five years, he collected brass keys as employees would turn them in. Recently, he hauled 600 pounds of defaced keys to the recycler and received a check for $185. The money will go to buy more recycling bins.

"You know, every little bit helps," he says, "and we want to set a good example. By educating the community on the importance of minimizing waste and energy use, and buying recycled, that has a ripple effect.

"People who are environmentally informed tend to spread the word to their co-workers, neighbors, and children."

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Initiatives in Resource Conservation

Recycling

- **Product recycling:** comprehensive program includes paper and cardboard, metal inkjet and toner cartridges, kitchen grease, landscape debris and pallets, X-ray film, lead-acid batteries, motor oil, tires, and paint.
- **Chemical-solvent recycling:** ethanol, xylene, and acetonitrile are recovered.
- **Chemical swap:** surplus chemicals are made available for redistribution.
- **Office-supply swap:** extra office supplies are advertised online for departments looking to trade.
- **Career boutique:** pre-owned professional clothing is sold at affordable prices.
- **Reading materials:** volunteers distribute used magazines and paperbacks to patients and waiting rooms.
- **Medical supplies:** devices are sterilized and used again.
- **Purchasing:** policy is to buy products with recycled contents, when possible.
- **Christmas trees:** holiday trees are turned into mulch or used for erosion control on Galveston beaches.

Pollution prevention

- **Vanpools:** 15 vans are provided for long-distance commuters.
- **Public transportation:** employees and patients ride buses and trolley for free.
- **Storm water:** storm drains are labeled "Dump No Waste/Drains to Bay."
- **Integrated pest management:** landscape with low-impact chemicals or nonchemical treatments, when possible.
- **Mercury phaseout:** traditional medical devices are replaced with alternatives.

Energy savings

- Campuswide strategy is to reduce utilities consumption.
- $12 million spent so far on energy retrofits.
- Solar panels are mounted on roof of parking garage.
- Two fuel cells will be installed.

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